

Longitudinal and Transverse Impedance Measurements and Simulations for ThomX

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The wakefields and impedance studies are crucial especially in low-energy accelerators with high beam current and luminosity. The beam coupling impedances can cause many instabilities which come from the interaction between the beam and accelerator components. The accelerator components have complex structures which do not allow for defining the impedance budget with theoretical calculations. The electromagnetic simulations and bench measurements should be applied to all accelerator components for calculating the overall impedances. In this work, the electromagnetic simulations and bench measurements of both longitudinal and transverse impedances will be presented for the ThomX transfer line and storage ring.

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